FGDC Member Agencies	1) Subcommittee/Working Group Participation	2) Strategy	3) Compliance
A) BLM - Bureau of Land Management	FGDC Cadastral Subcommittee, Eastern Cadastral Steering Committee, Western Cadastral Steering Committee, GOS, GOS Cadastral Modeling Team (MAT), GOS Harmonization Team, Marine Boundary Working Group,	The National Integrated Lands System (NILS) uses all applicable FGDC Standards to build Bureau-wide systems for managing land ownership and land records. NILS and BLM have completed data delivery systems that support the activities of the Geo 1 Stop.	Yes. The National Integrated Lands System (NILS) has just completed Phase 1 of data migration that will store cadastral survey data in FGDC compliant standard formats. The standards that are currently used are: FGDC Cadastral Data Content Standard; FGDC Geospatial Metadata Content Standard; FGDC Standard for a US National Grid, Open GIS standards for data publishing
B) DOC - Department of Commerce - Bureau of the Census & National Oceanic and Atmospheric Administration	FGDC Subcommittees: Base Cartographic, Cadastral, Spatial Climate. FGDC Working Groups: Ad Hoc Metadata, Biological Data, Clearinghouse, Coordination Group, Earth Cover, Standards, Homeland Security, Civil Imagery and Remote Sensing Task Force, Tribal. Other: GPS Interagency Council.	Yes. 3 primary DOC agencies involved in this: a) NOAA's Coastal Services Center strategic plan outlines a strategy pursuant to Circular A-16. B) Census establishes agency policies related to FGDC standards and coordination. C) NOAA's National Geodetic Survey's principal activities are collecting, processing, archiving, and distribution of spatial data.	NOAA and Census are both members of the FGDC Standards Working Group and are well aware of the FGDC Standards. Standards used include: Content Standards for Digital Geospatial Metadata, Shoreline Metadata Profile of the content Standards for Digital Geospatial Metadata, Remote Sensing Extension of the Content Standard for Geospatial Metadata, Geospatial Positioning Accuracy Standards, Part 1 and Part 2; Spatial Data Transfer Standard Part 6: Point Profile Metadata Profile for Shoreline Data. Census Bureau's spatial data compliance is solely at the exchange level.
C) DOS - Department of State	None.	Yes, working with NIMA this office assures that the depictions of international boundaries conform to uniform data extraction standards.	There are no FGDC standards specifically for international boundaries but State's data collection activities conform to the general standards prescribed by the Geographic Information Framework Data Content Standard (Part NNN) Governmental Unit Boundary Data Exchange Standard.
D) DOT - Department of Transportation	Geospatial One Stop Initiative; FGDC Coordination group; FGDC Steering Committee; FGDC Standards Working Group; Geospatial Applications & Interoperability WG, FGDC Homeland Security WG, DOD JFCom HIFLD	No- DOT has not developed a strategy for integrating GIS data into its business practices. FAA and BTS are independently developing such a strategy. Each modal administration within the Department acts like independent agencies with similar goals but independent focus.	All geospatial data in the National Transportation Atlas Database (NTAD) program comply with FGDC standards. These data are collected, created or maintained by the modal administrations that make up DOT. BTS plans to implement all future Geospatial One Stop standards and conducts QA/QC on transportation data distributed through the NTAD Program and prepares FGDC compliant metadata for each.
E) EPA - Environmental Protection Agency	Subcommittees: Federal Geodetic Control, Marine & Coastal Spatial Data, Spatial Water Data, National Hydrography Framework Standards, Vegetation Working Groups: Earth Cover, Facilities, Geospatial Applications & Interoperability, Homeland Security, Standards, Tribal Task Forces: Committee on Civil Imagery and Remote Sensing Task Force	Yes. The EPA Geospatial Blueprint (June 2003) lays out goals, objectives, and key action items for integrating geographic information and spatial data activities into EPA business processes. This Blueprint emphasizes the importance of complying with and implementing the FGDC strategy, pursuant to OMB Circular A-16.	EPA data holdings are compliant with FGDC point data standards and several EPA regions are fully compliant with FGDC metadata standards. EPA is taking several formal steps to ensure total compliance with the FGDC standards required by OMB Circular A-16. (see EPA report for more details)
F) FSA - Farm Service Agency	Cadastral Sub-Committee.	Yes. FSA prepared a GIS Implementation Blueprint and a 2003-2004 Acceleration Plan that laying out GIS Implementation for the Agency.	FSA provides FGDC compliant metadata for all nationally sanctioned geographic data created by the agency. All digital imagery meets National Map Accuracy Standards. FSA will collect and store FGDC compliant metadata for new digital ortho imagery in a national geodata warehouse currently under development. FSA is using the content standard for geospatial metadata.

FGDC Member Agencies	1) Subcommittee/Working Group Participation	2) Strategy	3) Compliance
G) FWS - Fish and Wildlife Service	Biological Data Working Group, Marine Boundary Working Group	Not at this time. FWS is working with other DOI personnel on the Enterprise GIS initiative and Geospatial Architecture, two efforts that will assist in developing this strategy. FWS is also evaluating how GIS fits within the business process of the National Wildlife Refuge System (NWRS), a first step towards creating a national strategy.	FWS adopted FGDC Standards for its spatial data and metadata, namely the National Vegetation Classification Standard, the Content Standard for Digital Geospatial Metadata (CSDGM), and the Biological Profile of the CSDGM. The National Wetlands Inventory (NWI) data is a FGDC Standard data set, and the Service is actively updating and creating FGDC compliant metadata for other data layers. The FWS will continue to adopt and use FGDC standards whenever they are applicable.
H) GSA - General Services Administration	GOS, FGDC Facilities Working Group, Homeland Security Working Group	GSA is developing a strategy for integrating geographic information into its Federal facilities application, the Federal Real Property Profile (FRPP). The FRPP is a summary profile of Federal land, buildings and structures as reported held by Federal agencies on the last day of the fiscal year.	GSA PBS has been involved with the Tri-Services CAD/GIS Technology Center for Facilities, Infrastructure, and Environment (CTCFIE). American National Standards Institute's (ANSI) Committee for Information Technology Standards has approved the CTCFIE's Spatial Data Standard for Facilities, Infrastructure, and Environment as ANSI standard NCITS 353. GSA PBS is incorporating requirements for compliance to addressing standards for the consistent and accurate conversion of location addresses to geocoded locations.
I) HHS - Health and Human Services	Subcommittee on Cultural and Demographic Data	Yes. The Department has a task order in progress to do this.	The HHS task order will modify the HHS Meta Directory in a format that conforms to the FGDC Content Standards for Digital Geospatial Metadata (CSDGM), version 2.0, 1998, accessible as XML and HTML documents in a Web accessible directory.
J) HUD - Department of Housing and Urban Development	None.	HUD's Enterprise Data Delivery Service (EDDS) includes a geospatial component designed to integrate geographic and spatial data into HUD's business processes. EDDS deployed a central Geographic Data Repository (GDR) in FY03 as part of its Enterprise Data Warehousing effort. This data is available for use throughout HUD and may be used in conjunction with Business intelligence tools to answer crosscutting questions.	FGDC Content Standard for Digital Geospatial Metadata
K) NASA - National Aeronautics and Space Administration	NASA participates in the following FGDC Subcommittees: Geologic Data, Soil Data, Vegetation. NASA participates in the following Working Groups: Biological Data, Clearinghouse, Earth Cover, Standards, Sustainable Forest Data, Homeland Security, Civil Imagery and Remote Sensing.	Yes, strategy exists: gcmd.gsfc.nasa.gov/Aboutus/standards & http://www.earth.nasa.gov/visions/data-policy.html	FGDC Standards used by NASA: FGDC Content Standard for Digital Geospatial Metadata; Remote Sensing Extensions for FGDC Metadata; and FGDC Swath Content Standard.
L) NIMA - National Imagery and Mapping Agency	Subcommittees: Base Cartographic Data, Federal Geodetic Control, Maritime and Coastal Spatial Data, International Boundaries and Sovereignty. Working Groups: Clearinghouse, Homeland Security, Marine Boundaries, Standards; Geospatial One-Stop Development	NIMA's primary business is Geospatial Intelligence and as such most business processes at NIMA are focused on geographic information and spatial data activities. NIMA is an active participant in Geo 1 Stop and is actively pursuing the posting of the metadata of its domestic homeland security geospatial holdings on the GOS Portal, to be followed by a posting of our planned geospatial data and information collection.	The metadata for NIMA's domestic HLS geospatial data will be compliant and placed on the GOS Portal. NIMA will implement relevant standards support by GOS as part of NIMA's development of a web server host for unclassified holdings to be posted. NIMA is an active participant in standards and development and implementation at the GOS, FGDC, and ISO levels.
M) NPS - National Park Service	Geodetic Control, Cultural & Demographic, Clearinghouse, Geologic	Yes, NPS has a draft GIS Strategic Plan that includes making spatial data and technology a foundation for NPS enterprise information systems. NPS participates in the DOI Domain Architecture Team for GIS.	NPS has maintained a NSDI node since 1994 and continues to post and develop metadata that is compliant with the FGDC Metadata Content Standard. All large programmatic data acquisitions require FGDC compliant metadata to be furnished as a deliverable product. FGDC Standards in Use include: FGDC Content Standard for Digital Geospatial Data; Vegetation Classification Standard; Soils Geographic Data Standard; Geospatial Positional Accuracy Standard; Cadastral Content Standard; and Spatial Water Data Standards (see report for more)

FGDC Member Agencies	1) Subcommittee/Working Group Participation	2) Strategy	3) Compliance
N) NRCS - National Resources Conservation Service	Subcommittees: Base Cartographic Data, Geologic, Spatial Water Data, Vegetation, Wetlands. Working Groups: Biologic Data, Geospatial Applications & Interoperability, Homeland Security, Standards, Sustainable Forest Data, Tribal, Earth Cover (inactive).	Yes. Spatial data is incorporated in most program management strategies, the NRCS Integrated Information System (which encompasses 7 critical software applications), and in the USDA Service Center Agencies GIS Implementation Strategy, 2001 (see http://www.ftw.nrcs.usda.gov/nsdi_node.html)	FGDC Standards used by NRCS: Content Standard for Digital Geospatial Metadata, Soil Geographic Data Standard, Content Standard for Digital Orthoimagery. NRCS is implementing a standard not yet endorsed by FGDC: Federal Standard for Delineation of Hydrologic Unit Boundaries. USDA/NRCS and the USDA Service Center Agencies have developed standards specific to internal management needs. NRCS will adopt the GOS framework data content standards when they are complete. NRCS uses other national and international standards where appropriate and USDA is a member of the International Committee for Information Technology Standards.
O) USACE - U.S. Army Corps of Engineers	Clearinghouse, Base Cartography, Standards, Bathymetric, Geodetic, Tribal, Homeland Security, Cultural and Demographic, Hydrography.	Yes, USACE issued Engineer Regulation 1110-8156 and Engineer Manual 1110-1-2909 in 1995, which details USACE geospatial data systems strategy and requirements. Both are currently being revised.	USACE has no mechanism to measure FGDC compliance. USACE requires that all acquired/collected data be documented using the FGDC metadata standard. Through the FGDC Facilities Working Group USACE has developed the Spatial Data Standards for Facilities, Infrastructure and the Environment and the Architecture/Engineering/Construction CADD Standards, both endorsed by National Standards Organizations.
P) USFS - U.S. Forest Service	Subcommittees: Base Cartographic; Federal Geodetic Control; Cadastral; Spatial Water; Vegetation, Working Groups: Clearinghouse; Metadata Ad Hoc; Sustainable Forest Data - Co-Lead; Homeland Security; Civilian Remote Sensing Ad Hoc, Biological Data	In 2002 USFS developed a Geospatial Strategy Team to develop a strategy for integrating geospatial information technologies and data into USFS business policies and processes. The goal of the Geospatial Strategy is "To provide quality Forest Service geospatial information to internal and external customers in a timely manner."	Not all USFS spatial data holdings comply with FGDC standards due to the agency's large, widely dispersed organizational structure. Over the past 2 years a management framework was developed to support, encourage and verify that spatial data is FGDC compliant. USFS uses at least 12 FGDC Standards. (see USFS report for more details).
Q) USGS - U.S. Geological Survey	Subcommittee Participation: Cadastral; Cultural & Demographic; Federal Geodetic Control; Ground Transportation; International Boundaries & Sovereignty; Marine & Coastal Spatial Data; Soils; Vegetation; Wetlands. Working Groups: Clearinghouse; Facilities; Geospatial Applications & Interoperability; Historical Data; Marine Boundaries; Metadata; Sample Inventory & Monitoring; Standards; Tribal	Yes - USGS policies specify that geospatial data be publicly accessible with published metadata posted on a NSDI node. USGS follows the FGDC strategy and guidelines found in OMB Circular A-16. USGS also participates in the development of international and national standards consistent with OMB Circular A-119.	Yes. FGDC Standards the USGS is using include: ANSI Profile of ISO 19115; Content standard for Digital Geospatial Metadata and its Extensions for Remote Sensing Metadata; Content Standards for: Digital Orthoimagery, Framework Land Elevation Data, and Digital Geospatial Data, Biological Profile; Geospatial Accuracy Standard, Parts 1 & 3; Geospatial One-Stop Framework Data Standards; National Hydrography Framework Geospatial Data Content Standard; National Standards for the Floristic Levels of Vegetation Classification; Anderson Land Cover Classification Standard; Spatial Data Transfer Standard; US National Grid

FGDC Member Agencies	4) Redundancy	5) Collection	6) Clearinghouse
A) BLM - Bureau of Land Management	The BLM has partnerships with States and counties for shared data collection, integration, and maintenance. BLM has active partnerships with tribes for joint data collection and maintenance. BLM facilitates coordinating data collection initiatives at the National level at Subcommittee meetings. (see BLM response for more).	Yes.	Yes. The BLM and NILS maintain an active data delivery site.
B) DOC - Department of Commerce - Bureau of the Census & National Oceanic and Atmospheric Administration	The Census Bureau maintains direct contact with more than 40,000 State, local, and tribal governments and takes full advantage of local information. Census maintains close contact with other agencies that have an interest in geographic data and collaborates with them in collection. NOAA's Coastal Services Center searches it's archives and that of its parent organization, in addition to Internet and FGDC Clearinghouse searches to ensure that redundancy does not occur. NOAA's National Geodetic Survey coordinates data collection activities with its federal partners through the FGDC Subcommittee and works with State and local entities in the collection of geodetic survey data to ensure that no redundancies exist.	Yes where applicable. For example: all data development contracts/grants at NOAA's CSC require the contractor/grantee to develop metadata that meet FGDC guidelines or to provide CSC with information needed to develop such metadata. At NOAA's NGS, all Statements of Work include requirements to meet the pertinent NSDI standards, the cost of which is covered by the contractor's cost estimates.	Yes. Until recently Census has forwarded its metadata to the USGS for maintenance on their server. Census is currently building a NSDI compliant server outside its firewall that will hold public metadata and some Census data. Geodetic metadata are available via the Federal Geodetic control Subcommittee and the NOAA CSC website. NGS data are available from the NGS website and will be published on the Clearinghouse as part of the Geo 1 Stop effort. NOAA's CSC has a registered NSDI clearinghouse node and there is a NOAA Clearinghouse for called NOAA Server with hosts 14 additional data clearinghouse nodes.
C) DOS - Department of State	No uniform, authoritative international boundary data in the form of digital lines with attributed descriptions currently exists.	Not at present.	Not at present. The standards are still under development and the collected data incomplete for public release.
D) DOT - Department of Transportation	Each modal administration acquires geospatial data independently with knowledge of geospatial information available through other modes within DOT. There is no Departmental systematic method to ensure that data exists prior to the stat of any new data collection activity. FAA: conducts extensive private/government searches. BTS will either use existing data or explore ways to participate with other interested agencies in the data creation.	There is no Department-wide policy to this effect, each modal administration sets individual guidelines. BTS data collection includes costs for complying with NSDI standards; FAA adheres to aerospace geospatial standards but is uncertain if these are compliant with NSDI standards.	All public data distributed through the NTAD Program is discoverable through the NSDI Clearinghouse. BTS is a node on the NSDI Clearinghouse network. FAA data funded through public sale is not distributed free on the Internet to the public sector. Safety and temporal requirements for the distribution of high quality data published in the NSDI Clearinghouse are under consideration. The Office of Pipeline Safety's (OPS) National Pipeline Mapping System (NPMS) data is security sensitive and is not widely distributed.
E) EPA - Environmental Protection Agency	The Geospatial Data Index (GDI) is an internal intranet tool to provide access to a catalogue of over 1000 geospatial data sets from EPA program offices. The GDI helps staff avoid duplicative development. Starting in FY2004, EPA will post significant geospatial data acquisitions to the Geospatial One-Stop Data Mart.	No.	No. Most data are not fully compliant with the FGDC metadata standard. Inadequate time and resources committed to tagging data with the required information at the time of development are the largest barriers to becoming fully compliant.
F) FSA - Farm Service Agency	FSA has managed farm field boundaries in a manual mapping environment for decades and has flown aerial photography for compliance purposes since the 1970s. This data has been an authoritative source for local governments in rural areas. FSA works in partnership with national, multi-agency coordination groups including the National Aerial Photography Program and the National Digital Ortho Photography program. FSA has partnered with several Federal and State Agencies for digital compliance and base imagery acquisition in 2003.	Yes. FSA contract specification for geodata acquisition includes requirements for information that will be used for FGDC compliant metadata.	FSA is pursuing NSDI Clearinghouse status. Barriers include lack of resources dedicated to that task.

FGDC Member Agencies	4) Redundancy	5) Collection	6) Clearinghouse
G) FWS - Fish and Wildlife Service	FWS maintains a website that points to the NSDI as well as many current data sources. This website makes it easier for staff to locate existing resources prior to collecting new data. Partnerships have been developed with federal agencies, states and local governments, and non-government organizations to coordinate geospatial activities.	Yes. At this time, the only significant cost for a standard is metadata creation.	FWS data and metadata are available on the Internet. FWS is updating and creating refuge boundary metadata files for publication on the NSDI and NBII Clearinghouses. Insufficient staff, funding and computing resources have been the primary barriers to establishing an NSDI node for any FWS data other than the NWI.
H) GSA - General Services Administration	GSA Public Buildings Service (PBS) maintains the system of record for PBS facility addresses. For other data GSA will rely on readily available data sets.	Not at this time. However, GSA PBS contracts routinely contain clauses defining standards for data collection and submittals.	Not at this time. Development of a framework for the sharing of data is in process. Also, available data and security concerns for having the data published are under examination.
I) HHS - Health and Human Services	HHS ensures that the data are not already available through the OMB clearance process.	There is no Department-wide policy to this effect.	Under the Task Order, HHS plans to serve FGDC conformant metadata for the use in the NSDI Clearinghouse using the "GEO" Profiles of the Z39.50 "Search and Retrieval" Protocol through connection of a Z39.50 server to the Meta Directory database.
J) HUD - Department of Housing and Urban Development	Goal is to acquire a repository and collect the pertinent data element information. This will be used to check for existing information about the data.	Most geospatial data collection involves address information. These addresses are centrally geocoded using HUD's standard Geocoding product which is capable of meeting NSDI standards.	HUD is developing an Enterprise MetaData Repository, of which geospatial data will be a part.
K) NASA - National Aeronautics and Space Administration	Program Formulation activities for new missions (new data-gathering spacecraft) include assessments of need of the data to be collected. NASA participates through the International Committee on Earth Observations Satellites, the National Research Council and FGDC's Civil Imagery and Remote Sensing Working Group to ensure that planned acquisitions contain data not already available.	Yes.	All datasets NASA makes publicly available are published in the Global Change Master Directory (GCMD) Clearinghouse node.
L) NIMA - National Imagery and Mapping Agency	NIMA has a strategic partnership with USGS and FGDC -- codified in a Memorandum of Agreement. One of the key elements of this partnership in the coordination of data collection between NIMA and USGS.	NIMA doesn't have standing contracts for domestic geospatial homeland security data collection.	NIMA is putting an interface to the GOS Portal in place to post metadata about unclassified, nonproprietary data. Barriers to the release of data include classification of data and the proprietary nature of certain data sets.
M) NPS - National Park Service	NPS checks NSDI for available data and also checks with partners like USGS, NASA and state organizations. NPS has posted future and on-going data acquisitions to the GOS in hopes of being contacted by potential partners.	Yes. NPS has written guidelines on how to write RFPs with NSDI requirements and a separate content metadata specification that can be pasted into a contract.	No, metadata development requires a continuing effort over a long period of time. About half (200) of NPS's parks data and metadata are available vis NSDI. Barriers are budgetary, technological and cultural (lack of funding and data management staff at park level; lack of FGDC support and grants; tools need to be developed to make metadata easier to collect. (see response for more barriers)

FGDC Member Agencies	4) Redundancy	5) Collection	6) Clearinghouse
N) NRCS - National Resources Conservation Service	NRCS relies upon local communication, the NSDI Clearinghouse, national coordination bodies such as FGDC, Federal, State, and local partners, informal geospatial data community, state geospatial consortiums and the private data vendor community to identify available data.	Yes. However they often do not include the long term support and maintenance of hardware required to serve data.	No. Several NRCS program specific datasets are not discoverable via the Clearinghouse due to lack of existing FGDC compliant metadata. The NRCS has 2.600 field offices and the scientists do not have the time to create FGDC compliant metadata. USDA Service Center Agencies have deployed an application which better meets the needs of the staff - the Resource Data Gateway, http://lighthouse.nrcs.usda.gov/gateway/.
O) USACE - U.S. Army Corps of Engineers	A search of the FGDC Clearinghouse must be made before a budget request can be submitted. For satellite imagery, Commands must check with the DoD Commercial Satellite Imagery Library (CSIL) to see whether DoD has already purchased imagery that could be used. Some USACE District Offices have posted planned data collection activities to the GOS Module 3 website. USACE will develop internal policy for all data collects to be posted to the GOS Module 3 website.	USACE has no policy stating this position, but believes that the cost of metadata and building the data to standards are part of the data collection and not a separate cost.	Approximately 1/3 of the USACE District offices have engaged with the USACE Clearinghouse node. Barriers include: Clearinghouse technology is old; 25% of Nodes are not functioning; and metadata found on Nodes is outdated/ not maintained.
P) USFS - U.S. Forest Service	Duplication is avoided internally by coordinating program management - the new FSNRA Geospatial Survey will enhance the process through the integration of natural resources databases. Externally USFS coordinates with NDEP, NDOP and other such interagency groups as well as State, County, and local governments and other partners to ensure effective resource utilization by all parties and to avoid duplication of effort. USFS will use the GOS Portal to review the posting of geospatial data acquisitions to ensure they do not engage in collection of data where it already exists. (See response for more)	National contracts include costs to cover collecting data to FGDC standards. Their National GIS Data Services contract deals with contracting the conversion of legacy data to FGDC standards. Contracts for actual data collection exist at Regional and Forest level and should contain provisions for NSDI standards.	USFS is providing access to geospatial data through fttp://fsgeodata.fs.fed.us. The geospatial data sets are bundled together by individual quadranges and are known as Cartographic Feature Files (CFFs). The Fsgeodata web site is being revised to include an ArcIMS web interface and will become operational once the server has been properly configured to address USDA and USFS web security requirements.
Q) USGS - U.S. Geological Survey	USGS maintains a website of existing geospatial data holdings. When a new project is begun the website is searched along with the NSDI Clearinghouse to locate data already available. USGS administers the DOI High Priority Program where data acquisition strategies, activities, and requirements are shared and leveraged. USGS is a member of National Digital Elevation Program and National Digital Orthophoto Program, where data collection plans are shared.	Yes. Procurements and contracts for data or data services specify compliance with appropriate ANSI and FGDC Standards. Contracts for data include the full cost of creating compliant data using appropriate standards and providing the metadata and registering the data online.	Yes. All geospatial data that USGS programs produced that have been reviewed and approved for public use are published on the NSDI Clearinghouse.

FGDC Member Agencies	7) E-Gov	8) Geospatial 1 Stop (GOS)	9) Enterprise Architecture
A) BLM - Bureau of Land Management	Geospatial data are used in all BLM programs and the agency has made a commitment to provide access to geospatial data and GIS tools. BLM uses their Geographic Coordinate Database to register legal documents to spatial framework data.	BLM representatives participate in Geo 1 Stop meetings. BLM is migrating the existing standard to an ANSI standard to be compliant with Geo 1 Stop activities.	Yes, this has been factored into the BLM's architectural design and implementation.
B) DOC - Department of Commerce - Bureau of the Census & National Oceanic and Atmospheric Administration	Many of DOC's projects are E-gov applications. The National Ocean Service (NOS) Enterprise Geographic Information System project will include all NOS geographic data for both internal and external users. NOAA's CSC Coastal Hazards projects are an E-Gov application that work to reduce the environmental, costal, and economic impacts from coastal hazards and facilitate increased decision-support capabilities for coastal managers. NGS's E-gov activities include: Web access to geodetic control data sheets, web access to GPS Continuously Operating Reference Station data, and web-based On-line User Positioning Service. Census has QuickFacts, American FactFinder, Tiger/Line files, and FedStats (see DOC report for web addresses)	Lead agency for the Governmental Units Framework Data Content Standard; Lead agency developing Geodetic Data Content Standard, I-Team participation; Principal partner in GOS; NOAA's CSC is coordinating the objectives of the GOS to the FGDC Marine and Coastal Spatial Data Subcommittee and the Marine Boundary Working Group; CSC is working with the FGDC Cadastral Subcommittee on developing the marine component of the Cadastral Data Content Standard; along with in-kind contribution, DOC has also transferred funds to the project in FY03	Census uses geospatial data in all statistical data collection activities, tabulation operations, and publication activities. The foundation of Census geospatial data is TIGER. CSC is the co-lead on the National Ocean Service (NOS) Enterprise Geographic Information System project, which will develop a unified and coordinated enterprise approach to spatial information management, utilization, and access across NOS. NGS performs functions necessary for NOAA to attain its objective to "Develop the National Spatial Reference System (NSRS)" which is part of NOAA's strategic goal to "Promote Safe Navigation."
C) DOS - Department of State	Uniform data format and descriptive data.	No, State Department is not participating as yet.	No, State Department does not have enterprise architecture at present.
D) DOT - Department of Transportation	FRA: website with grad crossing safety info and 2 rail network GIS databases; FAA: not yet listing their holdings on the Internet: OPS: informs the public of the pipeline operators in a specific geographic area; BTS: interactive Internet mapping center in addition to the downloadable national dataset; FTA uses geospatial data to analyze half mile radius around existing transit stops for population density - used as a benchmark for funding future transit projects; FHWA has interactive GIS web sites for national highway system and metropolitan planning.	BTS is developing transportation standards for Geo 1 Stop with FAA, FTA, FHWA, and FRA. BTS is the lead federal agency for the development of the transportation theme standards and is funding the development of prototype One-Stop servers.	As the geospatial lead in DOT, BTS is working with DOT's CIO to determine appropriate enterprise architecture for geospatial and other business needs. Geospatial information is a component of the BTS enterprise architecture.
E) EPA - Environmental Protection Agency	E-Gov supports 19 areas of business: Development of Criteria; Development of Methods and Protocols; Provision of Public Information/Trend Analysis; Development of Policies; Monitoring; Program Implementation Oversight; Development of Regulations and Guidance: Permitting; Compliance and Enforcement; Emergency Response: Research; Performance Measurement; Site Clean-up; Setting of Standards; Grant/Contract Implementation and Oversight; Laboratory Activities; Risk Assessment; Training; and Procurement. (see EPA report for specific examples)	EPA participated in crafting the GOS business plan and EPA is supporting the initiative with both funding and in-kind FTEs in FYs 2002-2004. Since October 2002 EPA's manager responsible for managing geospatial activities in the Office of Environmental Information is now detailed in the position of Acting FGDC Staff Director. (see EPA report for more)	Yes. Incorporating geospatial data and technology into mainstream business and IT management will enhance the value of the data available for environmental planning, analysis, and decision support. EPA will transition to a technical environment with georeferenced ambient monitoring and program data jointly residing in integrated database systems with geospatial data and imagery. (see EPA report for more)
F) FSA - Farm Service Agency	Currently all local offices in 11 States have their Common Land Units (CLU) digitized and offices in 22 other States are in the process, and 7 other states have been outsourced. Three additional states are planned for outsourcing before the end of FY2003 and (provided timely and adequate funding is received in FY2004) plans are for FSA to complete the CLU digitizing by early FY2005.	FSA contributed $45,000 in 2002 for the GOS and named 11 staff members to participate in GOS modules. In FY2003 FSA participated in a USDA-Agencies contribution that totaled $180,000 and provide in-kind staff contributions as requested by the GOS Project Manager in the amount of $535,000.	Yes. FSA is in the process of converting manual maps to digital format to directly link geospatial information to tabular program data. This will help in the measurement and accounting of agricultural commodities and land.

FGDC Member Agencies	7) E-Gov	8) Geospatial 1 Stop (GOS)	9) Enterprise Architecture
G) FWS - Fish and Wildlife Service	Interactive Map Servers are used to serve the NWI data set, migratory bird databases and several sets of endangered species critical habitat data. FWS Environmental Conservation On-Line System (ECOS) provides access to databases and geospatial layers including endangered species and fish barrier data.	The NWI data set is listed as a data set in the GOS. FWS has identified a representative to work on GOS activities and is also investigating potential funding needs for any work that will be involved in providing data to the GOS.	GIS is one of 12 inter-related components of the "Service Information and Technology Architecture (SITA)", which is focused on bureau-unique issues. FWS representatives are also participating in the current DOI Enterprise Architecture effort, including the GIS Domain Data Architecture Team. SITA will seamlessly mesh with and fully support the DOI Enterprise Architecture.
H) GSA - General Services Administration	Spatial data developed from standard location and address data for GSA facilities will provide consistent information for sharing (based upon security requirements) with other government agencies and services to meet their missions.	GSA actively supports GOS with outreach efforts to encourage active participation of state and local government officials in GOS. GSA is also participating on the FGDC Homeland Security Working Group's Public Access Subcommittee. GSA is the lead agency for the NSDI Buildings and Facilities theme.	Geospatial data is captured in GSA PBS's Enterprise Architecture and includes location data about the facilities. The Business Architecture depicts this information as being created and maintained in the functions of Manage Design and Construction and Manage Space Delivery.
I) HHS - Health and Human Services	GIS surveillance activities at the HHS Command Center (in support of Homeland Defense); CDC's Atlas of Reproductive Health; CDC's new Marcus Operations Center.	Under the Task Order, HHS plans to serve FGDC conformant metadata for the use in the NSDI Clearinghouse using the "GEO" Profiles of the Z39.50 "Search and Retrieval" Protocol through connection of a Z39.50 server to the Meta Directory database.	HHS has an "enterprise architecture" under development. Geospatial data will be a component.
J) HUD - Department of Housing and Urban Development	To determine eligibility for participation in HUD programs.	HUD's Enterprise Data Delivery System (EDDS) includes a geospatial component (Enterprise Geographic Information System) that is designed to be fully compatible with the GOS concept and architecture.	Geospatial data is an integral part of HUD's Enterprise Data Warehousing Architecture - a subset of the Department's Enterprise Architecture.
K) NASA - National Aeronautics and Space Administration	Gathering and disseminating Earth Science geospatial data is a principal function. Interoperability standards are being promoted as a way to improve data dissemination. Landsat-7 produces 150 Gbytes of data per day, Terra spacecraft produces 194 Gbytes/day.	Myra Bambacus served as Acting Executive Director and continues in an Agency leadership role in support of GOS. Jeff de La Beaujardiere served as GOS Portal Manager, NASA provides Leslie Wollack on full-time detail for GOS Outreach and has open IPA slot for eventual Deputy Program Manager. NASA provides direct monetary contributions to GOS.	Geospatial data is the basis of the Earth Science Enterprise Strategic Plan (for diagram, please see NASA report)
L) NIMA - National Imagery and Mapping Agency	Geospatial data is the foundation for all of NIMA's GEOINT analysis and production activities. It provides the spatial context for addressing key intelligence questions and operational missions for our customers in the National Security, Department of Defense and Intelligence communities.	NIMA is a federal partner and provides the Department of Defense lead on GOS. NIMA provides both direct and in kind resources to the development and sustainment of GOS.	Geospatial intelligence data is the core component of NIMA's enterprise architecture.
M) NPS - National Park Service	NPS uses geospatial data to: enhance preservation of park resources with scientific spatial analysis and modeling; enhance visitor experience with GPS use tools and tips, Interactive Map Center, search and rescue maps, and planning analysis; provide geodata products to our partners and local park communities; and enhance effectiveness of the NPS organization and park operations by using standard spatial data	NPS has registered its Clearinghouse node and post information about large fire and natural resource data holdings and planned acquisitions	The NPS will be developing Enterprise Architecture once the DOI effort is complete and it will include a geospatial component.

FGDC Member Agencies	7) E-Gov	8) Geospatial 1 Stop (GOS)	9) Enterprise Architecture
N) NRCS - National Resources Conservation Service	NRCS products support E-Gov activities include: Customer Service Tookit, Resource Data Gateway, Wetlands Easement Tool, Land Evaluation and Site Assessment, Office Information Profile, etc. NRCS allows internal and external to order digital geospatial data via the Internet. (see response for more)	NRCS provided $22,500 in FY03 and an NRCS staff person served as the standards lead for nine months. Additional staff support the effort and $45,000 was provided in FY02 in addition to USDA funds for portal development.	The USDA Service Center Agencies (SCA) maintain a shared enterprise architecture. The data architecture accommodates the need for geospatial data at all levels. The SCA are currently implementing geodata warehouses to provide web delivery of geospatial data to local, State, and national offices and customers. NRCS data is discoverable via the NSDI clearinghouse and Geodata.gov portal.
O) USACE - U.S. Army Corps of Engineers	USACE developed a public map website for the National Inventory of Dams and for information on USACE's projects. USACE will be developing a web mapping interface to capture regulatory permit requests from the public.	USACE has a GOS Point of Contact and is identified in the Exhibit 300. $100K was passed to USGS to support GOS Module 3. Signed GOS DoD MOA and a GOS MOA with USGS. Actively participated in the Transportation standard development.	The web interface for mapping is part of the enterprise architecture. As the architecture is further developed, geospatial data will be part of the overall architecture, but at this time it is not.
P) USFS - U.S. Forest Service	USFS supports these E-Gov activities: Burned Area Ecosystem Recovery efforts; updating and maintaining the Geographic Names Information System data within USFS land; Live mapping and GIS applications on the Web; FGDC Clearinghouse node; participation in the Geo 1 Stop; Recreation.Gov; participation in the National Map; e-Permits; and the joint USGS/USFS on-line service for the sale of USFS maps.	USFS has been active as a data provider for elevation, orthoimagery, hydrography, administrative boundary and cadastral data. USFS will provide transportation data soon. USFS is involved in the standards development for the above themes and is a Geo 1 Stop Primary Point of Contact. USFS is providing the wildland fire fighting community access to MODIS Active Fire maps through the GOS Portal. (see USFS report for more)	The USFS Enterprise Architecture is being developed and geospatial data is part of this project - addressed in the Forest Service Data and Applications Architecture Framework (Feb. 2002) available upon request. FS Geospatial Strategy defines how the FS Enterprise Architecture will incorporate geospatial tools, data and activities. (see USFS report for more)
Q) USGS - U.S. Geological Survey	USGS provides public access to its geospatial data holdings in both electronic and printed form. USGS ensures the preservation of its work in accordance with NARA archive and data preservation policies.	USGS has lead agency responsibility for 3 themes: Hydrology, Elevation, and Orthoimagery. USGS also participates on 2 other theme activities.	Yes. USGS is constructing an Enterprise Architecture document. USGS developed Exhibit 300 in the areas of Enterprise Web and Enterprise GIS.

FGDC Member Agencies	10) Partnerships	11) Lessons Learned
A) BLM - Bureau of Land Management	BLM has many partnerships for data coordination and collection. GCDB has active partnerships with many western and some eastern counties for collection, maintenance and delivery of data. BLM has a program for developing collection activities with tribal governments.	Budget for GCDB and supporting partnerships. Partnerships are the essential element of success.
B) DOC - Department of Commerce - Bureau of the Census & National Oceanic and Atmospheric Administration	NGS has many partnerships to provide access to consistent and accurate spatial reference: Over half the States have a Geodetic State Advisor jointly funded by NGS and the State; 61 State, local, academic, private and federal agencies partner with NGS in providing GPS data from Continuously Operating Reference Stations; NGS accepts survey data from State and local orgainizations to be put in the NGS data base; NGS has local partnerships developing spatial reference centers in States, and to implement Height Modernization. Census has a long-standing policy of interagency cooperation, as well as cooperation with State, local, and tribal governments for data collection. CSC's Coastal National Spatial Data Infrastructure is one of the agency's 4 themes and through its many partnerships it engages coastal and marine customers and encourages participation in NSDI activities. NOAA's CSC partners directly with FGDC to provide metadata training to its partners.	Coordination: FGDC is limited to simply encouraging agencies to coordinate without authority to do more. There is no functioning method that has been institutionalized within individual agency operations for geospatial coordination. Consistency: The ability to smoothly integrate a point's coordinates with other points has been addressed by the promulgation of official national datums. Accuracy: Ability to achieve high levels (a few centimeters) of accuracy has been improved by employing GPS techniques developed by NGS. Timeliness: The longer it takes to accurately position a point, the greater the labor cost per point. Techniques, procedures, and best practices are being developed by NGS to reduce the time required to position a point accurately. State Legislation on Spatial Reference: Most State legislation was written in the era when classical line-of-sight surveying techniques were used but the use of GPS techniques has revolutionized surveying and some existing state legislation may be longer be relevant to current technology.
C) DOS - Department of State	State Department has a partnership with NIMA regarding international boundaries.	It is difficult to make one set of data conform to all user needs.
D) DOT - Department of Transportation	Most modal administrations already have partnerships with other field units for data collection and typical do not collect raw data but receive data for other governmental and non-governmental units' databases. FAA has built partnerships with its Information Technology Staff, Aviation Systems Standards Program. BTS works with field-level organizations, State DOTs, FTA and FHWA. Most of the data FHWA collects are obtained through the States, some through other Federal agencies. OPS has a statutory requirement that mandates operators' submission of data to the NPMS.	Many agencies have challenges related to resources, support, and visibility of Geographic Information Technology. BTS is working with the DOT to recognize GIS as a departmental program. DOT must overcome stove pipes regarding the coordination of data collection and use strategies. Standards for dealing with geospatial information are not fully developed within DOT. BTS is developing a lessons-learned document related to Geospatial One Stop activities. FHWA is working with partners to improve data quality and integration. FAA is participating in DOT's geo-spatial initiatives and sharing lessons learned.
E) EPA - Environmental Protection Agency	To avoid duplication of effort EPA is working to acquire directly from the source so no duplication of effort occurs. EPA is working with: USGS, State and local groups, data partnerships in the EPA regions, and multi-agency geospatial data production projects. (see EPA report for more)	FGDC metadata requirements require a great level of effort and commitment. FGDC needs to promote and support easy mechanisms for developing metadata development at the time of data collection (e.g. ARC catalogue) and let developers know these tools exist. The large number of elements required to meet FGDC metadata requirements increase the level of effort and commitment necessary to comply with the requirement.
F) FSA - Farm Service Agency	FSA was one of the founding members of the National Aerial Photography Program and the National Ortho-photography Program. Both programs provide for partnerships at both the State and Federal agency level. FSA works with state agencies and entities to establish a compliance imagery program called the National Agricultural Imagery Program. FSA partners with Natural Resource Conservation Service and Rural Development Agencies to identify, acquire, share and create development and use standards for geospatial data.	Without sufficient consistent funding, Agencies cannot implement GIS into mission activities in a timely or effective manner, thereby limiting ability to fully integrate E-Gov capability. Funding for GIS initiatives has been inconsistent and when funded resources are generally limited. Without consistent funding it is difficult for Federal agencies to collaborate with state and local entities in a timely manner and capitalize pooled resources for data acquisition.

FGDC Member Agencies	10) Partnerships	11) Lessons Learned
G) FWS - Fish and Wildlife Service	FWS has partnerships with: University of Minnesota Department of Forest Resources, NatureServe, The Conservation Fund, Channel Islands Regional GIS Collaborative, Central Coast joint Data Committee, Montana Spatial Data Infrastructure, Ducks Unlimited, North Dakota Game and Fish Department, South Dakota Game, Fish and Parks, and many more. (See response for more details.)	A major concern is the increasing number of non-funded mandates from sources outside the FWS in the area of spatial data. The sheer volume of the directives and data calls far exceeds FWS's ability to adequately respond with existing resources.
H) GSA - General Services Administration	GSA PBS is a participating member of the Homeland Infrastructure Foundation Level Database (HIFLD) Working Group. HIFLD is a community of interest of over 90 federal, State and local government organizations and supporting contractors concerned with geospatial issues related to homeland security, critical infrastructure protection and crisis and consequence management.	Lessons Learned: The correct identification of facilities according to type and location (including remote facilities), using proper standards for data collection and measures to ensure standards compliance, is critical for data management and sharing.
I) HHS - Health and Human Services	The Steering Committee is working to establish a new and ongoing relationship with the HHS Data Council. This will provide a basis for future partnerships and data sharing activities.	Not at this time.
J) HUD - Department of Housing and Urban Development	EDDS through its "Outreach Program" gathers geospatial business requirements from the major program areas within HUD and from HUD's field operations. EGIS uses data from Census, FEMA and EPA, and there are plans to expand geospatial data sharing with all of HUD's community partners.	
K) NASA - National Aeronautics and Space Administration	NASA created and leads the FGDC Geospatial Applications and Interoperability Working Group. NASA GIO holds agency membership in Open GIS Consortium and provides representation in ISO Technical Committee 211. NASA actively participates in the GOS and NASA Earth Science Enterprise Application Division has ongoing partnerships and data-sharing activities.	Volumes of data are a concern. In less than a year, the Terra instruments doubled NASA's Earth Science data holdings. Also advancing the data visualization technology is another area of importance for NASA.
L) NIMA - National Imagery and Mapping Agency	NIMA has data collection and data sharing partnerships with USGS, FEMA, and DHS. NIMA relationships with data sharing with state, local and tribal government are arbitrated through other federal agencies such as USGS and FEMA. An example of this are the resources invested by NIMA in the collection and sharing of infrastructure data for "133" cities.	Issues of classification, privacy and the proprietary nature of certain types and classes of data need to be resolved. What is needed is clear, concise, comprehensive and enforceable policy. Standards need to be applied and adhered to even as they evolve to ensure that semantic consistency develops throughout the geospatial community.
M) NPS - National Park Service	NPS has partnerships with BLM, National Geographic, Trail Associations, USFS, USGS, EPA, NOAA, FWS, NGS, NASA, American Association of State Geologists, American Geologic Institute, NRCS, Geological Society of America, North Carolina State University, University of Rhode Island, U of Wisconsin, and more (see report for complete list)	DOI bureaus needed the funding that went to the USGS 133 cities mapping program to complete mapping and revision of our DOI managed lands which are not usually in major cities. New Homeland Security funding should be used for mapping cities, not DOI funds. Also partnerships are hampered by federal contracting regulations and difficulty transferring funds between agencies and non-federal organizations. A new business model for spatial data partnerships is needed.

FGDC Member Agencies	10) Partnerships	11) Lessons Learned
N) NRCS - National Resources Conservation Service	NRCS is active in state geodata consortiums, which are critical in leveraging funds to support data development. NRCS participates with the I-Teams that are coincident with the state consortiums. NRCS state level partnerships with other Federal agencies, States, local and tribal governments are too numerous to list. The National Cooperative Soil Survey is a national, multi-partner effort details at: http://www.geoall.net/docs/lessons_from_practice.pdf	PLEASE SEE INDIVIDUAL RESPONSE FOR DETAILS. Includes: need for additional standards expertise within FGDC office. Existing staff resources are not adequate for standards development and GOS support. Overall standards strategy needed to address existing FGDC standards. Voluntary, consensus standards take years to develop, not months. Few incentives exist for cross-agency cooperation since budget allocations are linked to individual agency performance in support of mandated programs. Alternative performance for long-term data development strategies are needed. Relationship between private sector and federal data warehouse/portal activities needs to be explored to minimize duplicative, non complimentary activities.
O) USACE - U.S. Army Corps of Engineers	The USACE Civil Works program is partnering with State, local and regional organizations to created synergy with water resources development and the environment, and to restore, manage and enhance ecosystems. Partnering includes data collection efforts.	None.
P) USFS - U.S. Forest Service	National Cooperative Partnerships include: GOS, FGDC Subcommittee and Working Groups; NDEP; NDOP, US Board on Geographic Names; Lewis and Clarke Bicentennial Commemoration Committee/Mapping Subcommittee; National Atlas; National States Geographic Information Council; Civil Applications Committee; National Aerial Photography Program; USGS/FS Single Edition Program; USDA GeoData Committee; Ecological Society of America; NatureServe	
Q) USGS - U.S. Geological Survey	USGS actively seeks out sustainable partners in all of its geospatial data activities. Through the National Digital Elevation Program, National Digital Orthophoto Program, and National Hydrologic Data partners, USGS engages Federal, State, and local agencies and organizations for partnership activities.	Agencies need funds for standards development - the coordination with States and locals takes time and careful coordination. The NSDI business case and its implementation for data and information sharing has seen little success over the 8+ years since EO12906. Agency activities and funding are primarily driven by agency missions and appropriated funding, operating differently and separately from NSDI coordination. Collaborative funding strategies need to be developed to facilitate the agencies to work together towards NSDI goals.